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ABSTRACT

This report of a 2-year study on public university responsiveness to academic and vocational reforms in public K-12 schools and community colleges focuses on: (1) how state universities respond to curricular experiments, and (2) the difficulties reformers encounter with universities. The report presents a brief summary of previous progressive education reform efforts; discusses the nature of current reform efforts, including constructivism, restructuring, national goals and standards, and human capital and lifelong learning programs; and notes universities' ability to influence entrance requirements, state master plans, policy interest groups, and funding. Four case studies of Oregon, Maryland, Ohio and California examine implementation of K-12 reforms in those states. They outline the state education system, note empirical evidence of university responsiveness, examine the climate for reform, note systemic accommodations, and discuss barriers to responsiveness. The study concludes that although public universities may be able and willing to accommodate school reform, it will be necessary to change university quality control standards, learn to think of curriculum as a system within which decisions are made and implemented, and focus university-level professional development on strategic responses to lower school reforms. (Contains 30 references.) (CH)

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Public University Responsiveness to School Reform: Lessons from Four State Systems

Kimberly Ramsey

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August 1997

Prepared for the National Center for Research in Vocational Education, University of California, Berkeley

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This study was motivated by six years of observations at high schools located throughout the country. From 1993-1996 I crisscrossed the country visiting demonstration schools associated with nine prominent education reform groups under the umbrella of the New American Schools Development Corporation. The reforms are primarily academically inspired. The implementation experience relative to public university responsiveness was strikingly similar to what I had seen in previous years when studying the implementation of vocational reforms—there was very little obvious response. At the school level, parents and students with clear university admission aims said they were reluctant to invest in coursework and assessments that might compromise their chancTheir honesty and the implications for school reforms seeded this effort.

PREFACE

This study focuses on how public universities are coping with school reform in high schools. It employs case study research to observe four states'—Oregon, Maryland, Ohio, and California—implementation of systemic reforms in their K-12 systems. It explores university systems' responses and accommodations to changes in lower schools.

The report should be of interest to leaders and school reformers based in universities, secondary schools, community colleges, education policy interest groups, and government who are concerned with advancing school reform and impacting required changes in the university. It should also be of interested to school administrators and counselors who are assisting young people's transition from high school to college.

The research was supported by the National Center for Research in Vocational Education, University of California, Berkeley. The Center is funded by the Office of Adult and Vocational Education, U.S. Department of Education, and engages in research and development activities designed to improve the access of all Americans to a high-quality work life. The study was conducted in RAND's Institute on Education and Training.

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1. INTRODUCTION

This report contains analyses from a two-year study of public university responsiveness to academic and vocational reforms operating in public K-12 systems and community colleges. The study focuses on two questions: (1) How are state universities responding to curricular experiments? and (2) What difficulties have reformers encountered with universities? The report fills a gap in what is known about how baccalaureate institutions are responding.

Nearly a decade of pressure to improve education in K-12 schools and community colleges has resulted in an explosion of academically and vocationally inspired reforms. The major products of these reforms are nonstandard courses that integrate vocational and academic instruction, accentuate community and civic awareness, and promote problem solving and critical thinking; and nonstandard assessments that measure mastery and performance. Although curricular separation in public education has been the rule for a century, vocationally and academically inspired reformers now share a common problem: both experience reluctance by the university to accept new nonstandard courses and assessments. Ironically, these nonstandard courses and assessments resulted from efforts to increase the rigor of vocational and general track courses and to make school more meaningful to students by integrating curricula and assessing mastery and performance. While the impact of these reforms has yet to be fully evaluated in any systematic fashion, their effect on young people's future chances for admission to the university are an immediate concern for reformers, parents, youth attending lower school, and for the university (Bodilly et al., 1992; Ramsey, 1995).

The anecdotal evidence suggests that state public universities, whose admission requirements strongly influence high school curriculum, are infrequent partners to high school reform whether it is academically or vocationally inspired. High school and community college reformers are further frustrated by mounting pressure from state capitols to produce improvements. In spite of the substantial federal, state, and private investment in school reforms, reforms will not undergo the test of systemwide implementation if a full range of American youth and educators are not participating.

For a growing number of students, the traditional didactic curriculum, narrowly focused on a single subject and taught in a classroom, is less appealing than the opportunity to engage in interdisciplinary projects and seminars or, alternatively, learning

in community and work settings. High school reforms are typically introduced as a choice between traditional and experimental courses and assessments. For example, students might have the option of enrolling in an experimental year-long course of "integrated geography and trigonometry" rather than take the traditional college-preparatory sequence of two semesters of geometry during the junior year followed by one semester of trigonometry during the senior year. Observers of high school reform have noted that due to concerns over competition for admission slots, students and parents forego the innovative option, and select the less risky path relative to admissions (Grubb, 1995; Bodilly, 1996). This is troublesome because innovative curriculum and assessments intended for broad implementation need to be tested with a variety of students and teachers, including those committed to university education.

There is anecdotal evidence that public colleges and universities have been reluctant to recognize applied academics courses and portfolio assessments as meeting entrance requirements (NWREL, 1992; Bodilly et al., 1992; GAO, 1993). However, data from a number of sources indicate that some public institutions do, in fact, recognize one or more applied academic courses toward admission requirements (McCormick, 1994). To date there has been no systematic, comprehensive effort to discover how baccalaureate institutions have modified their admission procedures and practices in response to recent reform efforts.

Studying the response to both vocationally inspired reforms—such as STW and applied academics—and to academically inspired reforms such as thematic curricula and alternative portfolio assessment should produce a more complete understanding of university responsiveness. Both types of reforms are actively pursued and supported by federal, state, and local educators. Both types also produce nonstandard courses, nonstandard assessment, and nonstandard transcripts. These elements can come into conflict with admissions policies and practices about public universities. Lessons learned by studying responsiveness to both types of reforms could benefit the advancement of vocational reforms in particular.

Organization of the Report

Section 2 contains background discussions, including an overview of past failures to mount progressive reforms during this century, the nature of new lower school reforms, the steady-state system of higher education, and political change. Section 3

introduces the general structure of the case study and hypotheses about university and high school relations relative to statewide implementation. Section 4 presents the results of the case study, including empirical evidence of university responsiveness, the climate for reform, systemic accommodations, nonaccommodations, and barriers to accommodation observed in the four states. The final section discusses findings and implications for reformers and universities.

2. BACKGROUND

LESSONS FROM PREVIOUS REFORM EXPERIMENTS

This section supplies historical context for the case studies. It examines university responses to the main school reform movements of the century and also details the elements of current reforms.

When philanthropist Andrew Carnegie convened his foundation's trustee board at his New York mansion on November 15, 1905 to seek their leadership on advancing a ten-million-dollar gift he, perhaps unwittingly, unleashed the power of university elites to dominate the agenda of America's expanding high schools. Carnegie had earmarked the sizable gift to the Carnegie Foundation for the Advancement of Teaching for establishing pensions for retired college professors, but his trustees had another agenda. The trustee board was composed of university presidents, including Charles Eliot of Harvard, Woodrow Wilson of Princeton, Arthur Hadley of Yale, and David Starr Jordan of Stanford. The trustees' agenda was to "reform from the top down a system of schooling they regarded as chaotic and ineffective. They saw Carnegie's grant as an opportunity to raise standards in American secondary and higher education through unifying and centralizing academic practice. They had no doubt that what was good for the elite colleges was also good for the country. The prestige of the presidents ensured that their proposals would "carry weight" (Tyack and Tobin, 1994, page 461).

With this peculiar sense of entitlement and a shared belief that new efficiencies rather than new pedagogies would solve the problems of secondary schooling, foundation president Henry Pritchard and the trustees focused their work on national implementation of the "Carnegie unit" system of academic credits and specifics of the academic curriculum. Curriculum aspects were adopted from joint committee work on college entrance requirements put forth by the College Education Examination Board (CEEB) and the National Education Association in the 1890s. When regional accreditation associations began to require the Carnegie unit as one criteria for accreditation, the unit became a legitimate means of standardizing secondary education. Colleges began to award "admission by certificate," sometimes without examination, to the graduates of high schools adopting the Carnegie unit academic system.

Tyack and Tobin (1994) underscore that the power of the university to dominate high schools resulted in part from copying the pedagogy of class recitation from elite colleges and implementing it as the national standard in urban high schools. That this pedagogical standard was a poor fit for the average urban high school comprising fifty-two students and two teachers, did not seem to matter at all.

Progressive Education Reforms

However, the progressive education movement was deeply troubled by university dominance over the high school and set in motion their own set of reforms to counteract this trend. Three efforts were made to prove that suspending university-cloned curriculum and pedagogy in experimental high schools, and employing alternative "progressive" methods, would result in learned high school graduates. The test of this hypothesis was that graduates would be successful once admitted to college (Kahne, 1995).

The first of the three, the Dalton Plan (1920s-30s) promoted individualization in pedagogy and curricular content. A national survey conducted around 1930 indicated that some or all aspects of the Dalton Plan had been implemented in nearly eight percent of secondary schools nationally. By 1949, the Dalton Plan innovations had been replaced by traditional organizational and pedagogical practices in nearly all implementing schools. Tyack and Tobin (1994) suggest that the reforms did not catch hold because the Plan retained traditional curriculum and textbook-based instruction. Teachers' primary criticisms centered on the extra paperwork and time requirements for planning and contracting with students about their learning goals and study plan.

The next effort was the Eight-Year Study (1933-1941) which was sponsored by the Progressive Education Association (PEA). This was an extraordinary one-million-dollar effort funded by the General Education Board and other foundations during the depression years. Reformers wished to erase the constraints of traditional institutional arrangements. They believed the standard of "Carnegie units" to credit learning was "artificial" and anti-educational. They wanted to adapt schooling to youth—what they need to know and how they best learn—rather than being dominated by the perpetuating institutional arrangements in college and university (Tyack and Tobin, 1994). The PEA's Commission on the Relation of School and College recruited two hundred colleges and twenty-nine outstanding, well-financed high schools. The colleges agreed to accept

highly qualified students on the basis of the high school principal's recommendation. The project provided technical assistance for curriculum development and evaluation.

Although school-level reforms were highly independent and individualized, common patterns emerged: cross-disciplinary courses; new emphasis on the arts; more activity-based learning in community service, productions, publications, and decision making in school matters; and more teacher planning time.

Nearly a decade after PEA efforts ended, Frederick L. Redefer and twenty-nine participants in the eight-year study took a retrospective look at the experimental schools involved in the study. The slippage observed after the Dalton Plan was mirrored in his findings. He found that for the most part, schools and teachers reverted to their old ways and looked to the elite universities' admission practices. The cultural messages of the 1950s—conservatism, anti-communism, fundamentalism—were not favorable to progressive thought and action. Curricula reverted to the focus on specialization and development of narrow skills, and schools reorganized around Carnegie unit crediting and departments. The progressive pedagogy which survived was largely segregated to experimental classes while traditional arrangements were solidly reestablished. Even with the aforementioned slippage, these schools continued to be thought of as innovators in their communities.

The third major attempt by progressive educators to motivate large-scale change was a 1960s reform initiative sponsored and funded by Ford Foundation (1961) and Danford Foundation (1968) for model school projects. Again, the patterns of the past were repeated, with one exception. Instead of selecting outstanding and wealthy schools, the reformer set their innovations in working-class neighborhoods and schools. After initial enthusiasm by teachers and administrators, their efforts were thwarted by parents who did not appreciate the "freedom" associated with the new innovations and who called for and received a return to tradition schooling, with only a few innovations surviving. The experimental efforts in Portland, Oregon schools are fairly well documented in local news accounts. This time progressive reformers had to endure being called "elitist" by the critics.

The Conservative Nature of Schooling

True innovation in schools and freedom from the dominance of university standards on the high school curriculum was doomed for several reasons. First, the most

powerful aspect of schooling—what teachers do and think—was out of the control of reformers and in the control of universities. Teachers are socialized into schooling practice at the university and schools of teacher education. Subject matter dominance in preservice teacher education is reinforced by the organization of departments, subject matter specialists, and the academic curricula. They are taught to believe that as professionals they "know best," and therefore are entitled to carry on their professional duties without interference. Most are not prepared to educate and engage parents and the community in strong discussions over needed reforms. The focus is on teaching, not learning.

The three reforms efforts did not require the university apparatus to do anything different, aside from making a special admissions set-aside for graduates of wealthy, outstanding high schools involved in the progressive reform efforts. This permitted the established university "quality control" system of faculty controlled course eligibility standards, Carnegie crediting, and standardized admission tests to operate unfettered.

The pedagogical and entitlement traditions of universities and the university admission "quality control" system together constrained innovation in high schools involved in the Progressive Education experiments. American education is often misjudged as a progressive and liberating activity in and of itself. Its truly conservative nature is revealed in these repeated examples of reform failure in spite of strong financial support and seeming removal of the constraints in university admission standards. The status quo of pedagogy, entitlement, and quality control are deeply embedded in the culture of universities and the culture of schooling.

THE NATURE OF TODAY'S REFORMS

There is no doubt that the involvement and cooperation of universities will help advance academic and vocational reforms in high schools and community colleges. The reforms are known by many names—vocational-academic integration, interdisciplinary thematic curricula, authentic and portfolio assessment, math and science integration, youth apprenticeship, tech-prep, and 2+2+2. They typically operate as state or district efforts which draw on policy streams connected to national reform movements and/or human capital or lifelong learning agenda tied to federal legislation. Although observers of school reform coin their own list of reforms, the reforms typically distill to a handful

of schooling aspects, such as teacher professionalism, subject matter, equity/diversity, student assessment, and restructuring/systemic change (Seidman and Ramsey, 1995).

In practice, school reforms are complex: they are tied to multiple policy streams and they are increasingly linked to each other (Andrew and Grubb, 1992; Little, 1993). For example, a reform directed at increasing the rigor of subject matter is likely to require corresponding reforms in implementing schools, such as teacher professionalism or student assessment. Several prominent national reform movements associated with the academic and vocational reforms comprising the study are discussed below.

Constructivism

Constructivism—which draws on the work of Piaget, Dewey, and Vygotsky—argues that the goal of education is to help students construct their own understandings. Reforms such as vocational-academic integration, interdisciplinary thematic curricula, authentic assessment, and cognitive apprenticeship are tied to constructivism. The Coalition of Essential Schools is an example of a national collaborative of education leaders and schools which promotes a constructivist view of learning in high schools.

Systemic Change/Restructuring

Initiatives promoting systemic change and the restructuring movement are closely matched at implementation. Implementing either tends to produce the other. For example, systemic change and restructuring are both produced in a state education system that adopts new standards, mandatory tests, assessments, and/or certificates and credentials used to matriculate high school students. The American Federation of Teachers and the National Alliance of Schools are two national organizations promoting systemic reforms.

Similarly, implementation of tech-prep, legislatively advanced by the Perkins Amendments of 1990, emphasizes collaboration between high schools, colleges, and state universities as institutions, operating in a system and serving students in a coherent manner. More than a mere set of articulation agreements, restructuring is the agenda of statewide implementation of tech-prep (Bragg, 1994).

National Goals and Standards

Private businesses under the leadership of David Kearns, who served on the Bush education team, formed the New American Schools Development Corporation (NASDC)

to fund school reform based on national goals for education introduced by the Bush administration. The reforms implemented under this initiation can be described as academic, constructivist, and restructuring at the classroom and school-level (Bodilly et al., 1995; Bodilly, 1996).

Human Capital/Lifelong Learning

The Clinton administration's human capital or lifelong learning agenda is complementary to the aforementioned movements. The initiative's focus on workforce preparation and concern with vocational improvements was reinforced with passage of two major policy initiatives: Goals 2000: Educate America Act (P.L. 103-227, 1994) and the School-to-Work Opportunities Act (P.L. 103-239, 1993). The two are noteworthy because they cross the barrier of vocational and academic education, and promote curricular integration, contextualized learning, and improvements for all students (Seidman and Ramsey, 1995).

THE UNIVERSITY'S PRIVILEGE TO DICTATE PREREQUISITES

Although curricular separation in public education has been the rule for a century, vocationally and academically inspired reforms now share a common problem: both experience reluctance by the public university to accept new nonstandard courses and assessments. Ironically, these nonstandard courses and assessments resulted from efforts to make school more meaningful and robust by integrating curricula and assessing mastery and performance. The result is that traditional vocational schools and programs increasingly seek to implement integrated curricula and intra-high school institutional arrangements that allow the simultaneous pursuit of skills development, career education, and pre-collegiate academic studies (Ramsey, 1995). Similarly, the demands for transfer curricula by students enrolled at community college are on the rise (Cohen, 1994; SREB, 1995). These nonstandard courses and nonstandard assessments challenge course eligibility and admissions practices in most universities.

Reformers cannot avoid involving the university in implementing these reforms because the university has the authority to dictate prerequisites. Historically, this authority rested and was aimed within the confines of the university, but eventually its influence drifted downward to lower schools. This downward drift of influence grew as more Americans aspired to and actually attended college. Traditionally, the university welcomed and initiated lower school reforms which stressed a core curriculum of

academic courses and predictable seat time. The emphasis on standard academic preparation places the university in tension with new reformers who advance nonstandard reforms. These nonstandard reforms seek to erase curricular segregation of academic, vocational, and arts subject matter, and they downplay the importance of seat time as a quality indicator in favor of mastery and performance. However implicit, these reforms also challenge the university's authority to dictate that the academic curriculum, as it now stands, is what young Americans will need in the next century. The authority to dictate prerequisites takes two forms: regulatory and bureaucratic. Reformers may need to find ways to work around both.

Regulatory Aspects

Regulatory dictates come in the form of university eligibility or entrance requirements which set forth a standard set of high school course requirements for admission or general education course requirements for transfer from community colleges. The standard set of courses, expressed in Carnegie Units, translate into seat time requirements. Efforts to reform the high school or community college curricula confront barriers posed by these requirements. These regulatory norms reinforce the status hierarchy of higher education and lower schools.

Bureaucratic Aspects

Bureaucratic dictates come in the form of state master plans for higher education. The driving factor in these plans is to produce efficiency through a differentiated system of higher education. The plans establish roles for a range of postsecondary institutes and community colleges, four-year colleges, and universities; the university is at the top of the hierarchy and community colleges, other postsecondary institutes, and secondary schools are at the bottom. Typically the university's role is to dictate the nature of standard coursework for those seeking to enter the higher education system. It follows that colleges and lower schools might align their courses of study so that graduates may enter and/or transfer to the university. The success of reforms such as tech-prep and 2+2+2 rests on smooth transition for students.

Other Aspects of the Steady-State System

The privilege of universities to dictate to high schools and community colleges is embedded in a steady-state system that protects the university's top status within a state's

public education apparatus and reinforces the autonomy of the public university. The strong influence of the powerful higher education lobby, joined with other interest groups such as veteran groups and minority population groups, have won consistent Congressional and state legislative support for the expansion of higher education. Public and financial support for higher education has permitted many state universities to advance their own master plan agenda with little incentive to collaborate or align with the agenda of K-12 schools or community colleges. In recent years, some cracks in the steady-state system emerged. State austerity measures and new lobby action aimed at higher education are highly visible changes in the steady-state system that might inspire new relations between the university and high school. Alternatively, the university might opt for privatization or contracting in order to sustain autonomy.

Role of Education Policy Interest Groups

Education policy interest groups are third parties who influence universities, legislatures, elected officials, political appointees, civil servants, mass media, and public opinion. Quasi-governmental bodies, such as the National Governors Association, the Council of Chief State School Officers, and the Education Commission of the States, have elected and appointed politicians as their primary constituency. Their concerns and agenda cross K-12 and higher education sectors. Interest groups that concern themselves with promotion and advancing higher education include the College Board, the American Council on Education, the Carnegie Institute, the American Association of Community Colleges, the State Higher Education Executive Officers Association, and the American Association of Higher Education. A third category of interest groups promotes advancements within particular functions and positions—of interest to this study are the activities of groups such as the National Association of College Admissions Counselors, and the American Association of College Registrars and Admissions Officers. The educational role of the these groups, specifically influencing membership, traditionally supersedes activist politics (Butler and Slack, 1994). The advancement of school reform and university involvement may be helped by interest groups demonstrating willingness to promote awareness of reforms and effects of reforms on their constituencies.

Funding Politics

Public higher education is funded in a context beset by austerity politics. The consequence is potentially reduced budgets and urgent calls for privatization to preserve

higher education. Increasingly, publicly funded education competes with other public sector institutions for a state's general fund budget. For example, California voters passed crime legislation—the "three strikes" initiative—that constitutionally sets spending for crime fighting and incarceration. Shires et al.'s (1993) recent analysis examined California's constitutional spending for K-12 education and crime compared with general fund projections. His study demonstrated that the general fund is not likely to have sufficient funds to cover constitutionally set spending as well as cover historical spending for other public sectors, including higher education, at required spending levels based on projected population growth. This means that public higher education funding is expected to drop just when more college-age youth expect to enter. This places mission-based expansion in jeopardy. Similarly, Oregon's reforms are beginning implementation in an austerity environment with passage of Measure 5[1] and in response the legislature accelerated privatization of its higher education system.

Public perceptions and support for higher education are also affected by tuition costs to students and their families. Reduced state appropriations for higher education can lead to higher tuition costs unless higher education institutions are able to produce efficiencies. Oregon recently enacted legislation to permit the higher education system and individual universities and colleges to find creative and internal ways to hold down tuition costs to state residents.

Agenda Setting

Observers of political change agree that agenda setting is a fundamental process involved in implementing reform (Kingdon, 1984; Stone, 1988). Agenda setting is "getting the attention of others." When a school reform is to be implemented systemwide, the chances that it will affect other components is quite high. In this sense, agenda setting is far more than getting the word out, it is a strategic activity intended to motivate powerful others to contribute, collaborate, or remain neutral.

Agenda setting involves specifying the reform, creating awareness, and disseminating it. Many reforms fail because the authors have not specified them—that is, they have not narrowed the set of required activities to support implementation. Specification might involve the review and development of new regulations, development of incentives and sanctions, capitalizing activities, restructuring activities, and/or

[1]Measure 5 cuts property taxes, as did Proposition 13 in California in 197X.

identification of neutral positions. The process helps identify partners and allies who will ensure successful implementation.

Political environments thrive on excitement and discussion. Restive elites are drawn, almost irresistably, to reforms that are well specified. Creating awareness and getting attention are vital to the perception that the reform has staying power. Successful reformers find ways for elites to witness the reform, that is, to see it in action, perhaps at a demonstration site. Alternatively, successful reformers are at ease among bureaucrats, in professional discussions, and in policy circles where they are able to spread the word comfortably. How does one know the time is right to disseminate? Once negotiations and agreements associated with specification are complete, several factors indicate that the environment is "ready:" when prominent figures understand and support the reform and interest in other initiatives is beginning to wane, the timing for consensus is favorable.

3. GENERAL STRUCTURE OF THE CASE STUDY

BACKGROUND RESEARCH

Four strands of background research informed the case study. Because new vocational and academic reforms deeply affect teaching and learning, the nature of the reforms and their potential challenge to the steady-state system and agenda of state higher education systems was examined. Reviews of previous case studies of reforms and political change theory suggested dimensions of greater and lesser importance. A historical review of university-high school relations in past reforms was undertaken to ensure the introduction of "in practice" examples and lessons. The background study led to development of three hypotheses on the responsiveness of public universities to reform.

Hypotheses

The study of university responsiveness centers on reforms set against conditioned responses associated with deeply held university traditions. Because the reforms challenge bedrock functions of the university—admissions, transfer, course eligibility, and teacher preparation—accommodation on the part of the university would suggest that some changes in cultural understandings or institutional arrangements had occurred. Nonaccommodation and some middle-ground response are also reasonably expected, given the troublesome history of university and high school relations. Political change theory suggests that assessing the chances for getting on the university's agenda is a starting point for measuring responsiveness. We pose three hypotheses below about the likelihood and nature of university response to K-12 reform.

- **Hypothesis 1:** The public university is apt to pay attention to insiders. This suggests that reformers who are accepted as part of the university culture have an advantage over other reformers.

- **Hypothesis 2:** The public university is more likely to pay attention to reforms involving the academic curricula. This suggests that academic reforms have an easier time getting on the public university's agenda than do vocational reforms. For example, nonstandard courses that integrate to academic subjects are more likely accepted as eligible for college admission standards than are

courses that integrate vocational and academic subjects, such as applied academics.

- **Hypothesis 3:** The public university does not pursue involvement with K-12 education. This suggests that involvement develops as a consequence of strategic appeals or that changes in the state environment threaten the steady-state of the higher education system.

REPLICATED CASE STUDY OF FOUR STATES

The case study examines how universities located in four states coped in 1995 and 1996 with high school and community college reform. The replicated case study looks at university responsiveness in four states whose legislatures, governors, and state education agency set in motion legislative and political demands for statewide improvements in secondary schooling. Earlier attempts by progressive education movement reformers to loosen the dominance of the university over high school curriculum and organization have resulted little or no action by universities to reverse the status quo. The case study centers on how university systems in four states are coping with current reform demands.

Sampling

The study employs a sample of four states involved in statewide K-12 reform. California, Maryland, Ohio, and Oregon are prime case study candidates for four reasons. First, each offers a range of academically and vocationally inspired reforms. Second, each has a differentiated state system of higher education. Third, even though reforms operating within these states are experimenting with ways to win acceptance for nonstandard courses and/or assessments and to establish credible articulation between lower school and universities, there is no systematic information on the nature or success their efforts. Fourth, each experienced unique legislative response to reform ranging from enactment of activist omnibus public laws to passage of discrete legislation inducing specific reforms, e.g., charter legislation, assessment legislation.

Technical assistance agencies are actively collaborating with each State Department of Education. Maryland and Oregon's State Departments of Education are involved with regional education policy and improvement efforts of the Southern Regional Education Board and the Northwest Regional Educational Laboratory, respectively. Similarly, California's State Department of Education and governor are

involved with the Education Commission of the States to lever state-level policy conducive to local reform. Ohio is working with the College Board.

The replicated qualitative case studies will sample state-led efforts and efforts led by national collaboratives that operate in the four states. The case study approach is appropriate when the process under study, university responsiveness in this case, is not easily disengaged from the context (Yin, 1981; 1982; 1994). Education policy interest groups who operate on the national and state levels are included in the sample. This strategy will produce a triangulated sample of three to four reforms in different operating environments. This will permit us to observe the efforts of the politically powerful in different state university environments.

Methods

In each state, the case study involved assessing the state policy environment, the flagship university or state university system, and education policy interest groups operating in the state and nationally. Elite interviews were conducted, in person, with politically powerful persons who have the ability to pose new agenda and to pressure others. The number of interviews varied by state, depending on the structure of higher education, assignment of responsibilities to individuals or committees, and degree of decentralization for accountabilities, such as admissions and course eligibility. For example, course eligibility might be shared by a number of individuals or faculty groups. A total of 60 interviews were conducted in the four states, 14 in Oregon, 10 in Maryland, 16 in Ohio, and 20 in California.

The assessment of the state policy environment focused on the structure of the higher education system, new legislation, fiscal politics, and political agendas. Interviews were conducted with lower school reformers in the State Education Agencies (SEAs), leaders of governmental technical assistance agencies, the governor's office, and legislators (e.g., education committee chairpersons and authors of major legislation). Interviews sought to understand efforts to gain acceptance for nonstandard courses and assessments with universities; and to characterize their view of the extent of adoption or implementation at the state level.

The assessment of the flagship universities and state university systems focused on their agenda, awareness of lower school reforms, and responses to high school and community college reforms. Interviews with university admissions committees, state

university chancellor committees, state master planners or state coordinating boards were conducted. Interviews with state agencies and/or faculty committees who set course eligibility and admission requirements attempt to account for the range of appeals and responses to reform.

The assessment of education policy interest groups focused on their agenda relative to reforms, their constituencies, and their responses to reforms. Preparation for the interviews involved reviews of documents outlining the vision of groups. Included in this preliminary review were groups such as the College Board, American Council of Education (ACE), American Association of Community Colleges, State Higher Education Executives and Officers of Admission, Carnegie Foundation, National Governors Association, and the Council of Chief State School Officers. Interviews were conducted with groups working in the case study state or who are actively involved with school reform or university reforms aimed at facilitating lower school reform. Interviews with ten leaders of policy interest groups and review of their position documents were conducted.

The design of the university interviews incorporates lessons from the historical review, review of political change literature, data from interviews with reformers; and from NCRVE, RAND, and MPR reports, and other national reports that describe large-scale reforms that effect curricula and assessment.[2]

Analysis

The case study analysis entailed surveying the data from interviews and documents, coding and sorting across cases to develop themes which form the bases of results. Interview results are reported by state, identifying elite respondents by their position. The report maintains the privacy of individual persons participating in the study. The reporting employs adjectives such as "many" or "few" to indicate the degree of agreement or consensus on a result. The analysis focuses on the three hypotheses to produce findings and implications that address reformers and universities.

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[2]The review included analyses of several national studies of school reform: Grubb et al. (1991); McDonnell and Zellman (1992); McDonnell (1994); and U.S. Department of Education (1994).

4. CASE STUDY RESULTS: UNIVERSITY RESPONSIVENESS

This section presents results of the four-state case study. State profiles of school reform activities indicate the emphasis of each state's strategy for reform in lower schools. A brief description of the higher education system is also provided. The section then reports on the climate for getting attention of state university systems and changes in the policy and reform environments relative to opportunities for gaining the attention and responses from state public universities. The section next reports on empirical evidence of systemic accommodations to nonstandard course and assessments; nonaccommodation to school-to-work reforms; innovations; and barriers to systemic accommodation.

STATE EDUCATION OVERVIEWS

Oregon

In response to *A Nation At Risk* (1983), the state of Oregon began earnest efforts to demonstrate improvements in K-12 schools, beginning with statewide meetings to assess the public's perceptions of problems and needs. From 1987 to 1995, the legislature and governors enacted a series of omnibus legislation to advance systemic school improvements. Key elements of school reform include the following areas: Certificate of Initial Mastery; Certificate of Advanced Mastery; site-based decision making; nongraded primary education; middle-level education; alternative learning environments; school choice; extended school day/year; school-to-career; outcomes-based assessment; and learning technologies.

The Oregon Department of Education, as primary coordinator for this massive effort, worked with the Oregon State System of Higher Education (OSSHE) almost from the beginning. OSSHE is an active member serving on joint committees assigned to oversee improvements in teacher education and teacher credentialing.

Oregon's higher education system is comprised of twenty-one public institutions and twenty-five private institutions. The public higher education system is comprised of the University of Oregon, state colleges, and community colleges. The University of Oregon is the most selective public institution. Statewide higher education policy and administration is the responsibility of OSSHE.

Maryland

Systemic education reform in Maryland was initiated in 1989 when the Governor's Commission on School Performance recommended widespread changes in the state's K-12 system. The premise of Maryland's reforms is that all children can learn, all children have the right to learn, and all children have the right to be taught in schools which provide rigorous content. Key elements of school reform include the following areas: school performance program; performance assessment; middle grade school policy; performance-based high school graduation requirements; technology initiative; and school-based and school-linked social services. Maryland is also a recipient of a federal school-to-work grant and Goals 2000 grant.

The Maryland Education Department and the Maryland Higher Education Commission (MHEC) work collaboratively on school reform, even sharing a deputy superintendent to facilitate seamless planning and support for the ambitious reform schedule.

Maryland's higher education system comprises thirty-three public institutions and twenty-four private institutions. The public higher education system includes the University of Maryland, state colleges, and community colleges. The University of Maryland is the most selective public institution. Statewide higher education policy and administration is the responsibility of MHEC.

Ohio

Ohio's sweeping K-12 school reforms began in 1991 with the enactment of omnibus education legislation. Ohio's systemic reforms center around improving human capital development and government efficiency. Key elements of school reform include the following areas: proficiency testing; graduation requirements; applied academics; school performance program; vocational portfolios; school-to-career; tech-prep; standards and assessment; and teacher education. Ohio is also a recipient of a federal school-to-work grant and Goals 2000 grant.

The Ohio Department of Education and the Ohio Board of Regents work collaboratively on school reform and have established an office of Academic Initiatives and Educational Linkages to facilitate collaboration for their common agenda: teacher preparation, professional development, and tech-prep.

Ohio's higher education system is comprised of sixty-one public institutions and ninety-one private institutions. The public higher education system is comprised of doctorate degree-granting universities and community colleges. The University of Ohio is the most selective public institution. Statewide higher education policy and administration is the responsibility of The Ohio Board of Regents.

California

In 1983, California enacted the Hughes-Hart Education Reform Act and launched a massive school reform initiative. The reforms are based on a premise that all children and young people can learn, and that introduction of higher standards will raise the quality of instruction and learning. Key elements of school reform include the following areas: graduation requirements; curriculum frameworks that emphasize thinking and solving problems; revised assessments; improved textbook quality; lengthen school day and school year; and improved professional development. Subsequent legislation focused on particular reforms, such as professional development and dropout prevention. California is also a recipient of a federal school-to-work grant and Goals 2000 grant.

The California State Department of Education and higher education entered a new period of cooperation and collaboration in 1995 through the efforts of the California Education Roundtable. The California Education Roundtable is comprised of top leaders of each of the higher education segments and the elected Superintendent of Public Instruction.

California's massive higher education system is comprised of one hundred thirty-eight public institutions and one hundred seventy-two private institutions. The public higher education system is comprised of three segments: the University of California, California State University, and California Community Colleges. The University of California is the most selective of public institutions. Higher education policy and administration is the responsibility of each segment.

CLIMATE FOR GETTING UNIVERSITY ATTENTION

Spirit of Collaboration

In each of the four states, SEAs and state university systems have created new joint committees to address lower school improvements. Nearly all state respondents said

that there was a new spirit of collaboration exists between higher education and SEAs. This change may have several sources. It may be that relations were never actually as difficult as perceived by many analysts. It may also be that school reform has the attention of university leaders. The attention-getting aspects might be best understood as resulting from perceived disequilibrium in the steady-state system of higher education. This section identifies changes in the policy and reform environments which may motivate responsiveness and favorable behavior from public universities.

Changes In Political Environments

Higher education is typically seen as a reliable and invaluable state asset and therefore rewarded with a considerable budget allocation. University finance chiefs attest they have been somewhat freed of the rough politics that are typically part of public finance. This favorable political environment allowed state universities to hold themselves separate from K-12 education in budgetary and other matters. Times and conditions have changed. These changes began in 1993 with a turn-down of the economy nationally. Changes in the politics of financing have made a few university finance officers reconsider institutional arrangements and question whether autonomy arrangements are politically feasible in this newly charged environment. One financial officer said that for the first time he is considering going to the legislature with the state's K-12 finance chief to make a joint presentation and request because "certain senators want to know that higher education and K-12 see themselves mutually as educators." Although all four states have austerity budgets, the agendas which feed the fiscal politics differ. Both California and Oregon are experiencing fiscal depression and higher education finds itself competing for dollars with K-12 schools, health, and corrections. Maryland's and Ohio's governors and legislators have a vision of stimulating their lagging economies through education improvements, making partnership with K-12 a viable strategy for higher education. In all four states, the governors, legislators, organized business and public sentiment gravitate to efficiency and "good government" demands for publicly financed institutions.

Changes In Reform Environments

There are also appreciable changes in reform environments which appear to threaten and get the attention of universities and higher education systems.

Vocal critics in government, business, and education contest the future demand and support for the baccalaureate degree on the grounds that changes in the nature of work favor skills acquisition and de-emphasize liberal education. Implied in this criticism are arguments that school reformers should look less to the university for approval and that growth and investment in postsecondary training schools and community colleges is an alternative and favorable policy direction. These criticisms have not yet reached the sensibilities of high school or community college students. High school students continue to favor higher education. Yearly surveys of high school seniors show the vast majority want to attend college. There is evidence that vocational and tech-prep graduates are increasingly drawn to higher education when they are convinced that admission is a possibility. Similarly, transfer rates of community college students to universities is growing. Employers continue to use the baccalaureate as a sorting device in spite of their complaints over the quality of recent college graduates.

This position troubles university leaders. University educators are well aware of compelling evidence that children and young people have failed to achieve cognitive goals. Low proficiency scores, growing demand for remediation, and employer complaints about poor skills of high school and university graduates are late warning signs that school improvements are needed. If K-12 skills continue to drop, the desire for growth in the higher education sector is not a logical pursuit. The fact that SAT results are flattened nationwide makes some question the viability for growth in higher education when young people in the pipeline have limited skills.

School reforms get the attention of university elites when there is compelling evidence of cognitive gains for all students. Many administrative elites praised the value reforms that protect equity goals. Yet when posed with the hypothetical choice to change admissions standards to make applied academic courses eligible for meeting requirements, several admissions officers and administrative elites said that "special admission" slots would be sufficient to handle the few students seeking university admission. A few admissions officers defended the status quo by arguing that decentralization of admissions makes it more likely that individual negotiation for special admission slots can be accomplished between high school principals and the admissions department. From these explanations, one might surmise that a spirit of collaboration does not necessarily signal that university elites have managed to overcome their sense of entitlement to dictate school reform and supportive university practices. Collaborative negotiations are necessary to advance past such positions.

National education policy interest groups have taken a strong role in promoting collaboration between K-12 schools and higher education on school reform matters. The Education Trust has initiated community-based K-16 collaboratives in the nation's smaller cities. The purpose of the collaborative is support and promotion of systemic improvements. The National Governor's Association and the Carnegie Foundation have held national meetings to roll out new collaborative models and demonstrations.

New conditions have made the university more vulnerable both in terms of its fiscal future and intellectual authority to freely dictate what reforms lower schools might implement and receive the cooperation of the university. This new spirit of collaboration has captured the attention of school reformers, and most welcome it. The past decade of pessimism may be escaped if universities, high schools, and community colleges take advantage of environmental changes that foster a climate for collaboration.

EMPIRICAL EVIDENCE OF RESPONSIVENESS

This section introduces examples of university responsiveness to lower school reforms that produce nonstandard inputs, e.g., nonstandard courses, nonstandard assessments, or nonstandard transcripts. There are three categories of responsiveness: systemic accommodations, nonaccommodations, and individual innovations. Systemic accommodations are those university activities that restructure the steady-state system in anticipation of nonstandard inputs sufficient to produce disequilibrium. These systemic accommodations are more than reactionary activities; they may also reflect independent purposes and thoughtful change strategies of university elites. Nonaccommodation occurs when the university does not respond to nonstandard inputs. There are also examples of individual innovations in response to a reform. Barriers which make systemic accommodations difficult to achieve are also addressed.

SYSTEMIC ACCOMMODATIONS

Oregon Systemic Accommodations

The OSSHE investment in a Proficiency Assessment and Admission System (PASS) provides a new and improved quality control tool for university admissions. The assessment focuses on what students need to know and do. PASS will permit universities to make admissions decisions based on an assessment of actual skills, rather than imprecise measures of quality, such as seat time, Carnegie units, or course titles. The

designers also anticipate employing PASS as an alternative to the SAT. The development of this breakthrough assessment tool came as a response to the planned implementation of CIM and CAM proficiency assessment tools in high schools.

A second systemic accommodation in Oregon is the constitution of a joint committee of OSSHE and the Oregon Department of Education to accelerate approval of new courses and set transfer standards. The tremendous growth of applied academic courses in high schools and tech-prep programs has made this a practical response. The committee is committed to ensuring academic rigor of applied courses and appropriate technical assistance to course designers. Like the above example, this systemic accommodation adds a positive dimension that promises smooth transition for students wishing to continue their education. Table 1, below, summarizes Oregon systemic accommodations.

Table 1:
OREGON SYSTEMIC ACCOMMODATIONS

Lower school reform	University response
Imminent implementation of assessment and credentials for matriculation (CIM) and exit (CAM)	OSSHE introduces proficiency assessment and admissions system (1994) based on knowledge and skills needed for college as new standard for incoming freshmen in 2001
Growth in student enrollments in applied academics courses (thirty-seven percent) and tech-prep programs (seventy-five percent)	Joint committee (1992) of OSSHE and OSDE reviews and accelerates new course eligibility and articulation

Maryland Systemic Accommodations

Systemic accommodations are also evident in Maryland (see Table 2). First, in 1992, the legislature mandated community service as a requirement for graduation from high school. The state university system responded straightforwardly by providing community service as an elective option for students who are interested in pursuing additional community experiences as part of their university studies

The second activity is a project to identify proficiencies required for university admissions. This project is very similar to Oregon's PASS project in that the forthcoming

state assessment for high school students helped motivate the design. The project has produced unintended benefits for university faculty: motivated by high school teachers prodding questions, they now are reflecting in a fresh way about what university freshmen and sophomores need to know and do.

The third accommodation involves constituting joint meetings of faculty and high school teachers to grapple with course eligibility standards and approvals for applied academic courses. Tech-prep programs and school-to-work reforms will benefit because students and parents will not have to concern themselves over taking courses that might not meet college eligibility standards.

Table 2:
MARYLAND SYSTEMIC ACCOMMODATIONS

Lower school reform	University response
Community service mandated as a graduation requirement (1992)	Elective community service courses introduced to create continuum for interested undergraduate students (1994)
New statewide standards and assessment program (1990); intervention for poorly performing schools (1994)	Joint MHEC and MSDE task force for "High School Outcomes-Based Graduation Requirements" identifies proficiencies required for university admissions
Tech-prep programs implemented in all county districts	UMSS implements Office of Articulation (1994) and sponsors joint faculty-teacher subject matter review teams to grapple with course eligibility standards and approvals for applied academic courses
Maryland Learning Outcomes and High School Performance Assessment in English, mathematics, science and social studies (in development)	MHEC annual Student Outcome and Achievement Report (SOAR, 1990) provides high schools with assessment of college progress of graduates

The fourth activity involves a new quality control tool. MHEC provides high schools with a yearly assessment of the college progress of high school graduates. The assessment is called the Student Outcome and Achievement Report (SOAR). SOAR may prove to be an invaluable tool for the design, assessment, and management of programs that combine college preparation and career preparation. New high school performance assessment tools in English, mathematics, science, and social studies which are in

development and will offer strong measures of high school performance when combined with SOAR measures.

Ohio Systemic Accommodations

In Ohio, systemic aspects of their school reforms are in early implementation (see Table 3, below). The first activity is a collaborative effort between the Ohio State Department of Education and the Ohio Board of Regents that centers on professional development of teachers in regional centers located throughout the state. The second activity focuses on the development of community college partnerships with high schools to produce tech-prep programs throughout the state.

Table 3:
OHIO SYSTEMIC ACCOMMODATIONS

Lower school reform	University response
Professional development	Ohio Board of Regents and ODE sponsored professional development services to K-12 teachers in regional professional development centers; funded by Goals 2000
Tech-prep	Statewide high school and community college consortia (1994) with little appreciable university involvement

California Systemic Accommodations

The wealth of school reforms in California makes it difficult for the university system to respond in a coherent fashion. The first activity involves simply educating university and college faculty about school reform. A committee constituted by representatives for all segments of education undertook development and distribution of a report to university and college faculty and requested departments to begin discussion about how the university might respond to school reforms.

The second and third activities involve needed technical assistance to advance a range of school reforms.

Nonaccommodation for STW Reforms

In some cases the university system did not respond to STW reforms. University elites in Ohio and California judged that a response was not required for two reasons: first, the special admission option was felt to provide an avenue for students who might seek admission; and second, the rigor of the programs is in question. University elites are conflicted over crediting work-based learning. If the pattern follows experiences in Oregon and Maryland, once STW enrollments rise, so will the pressure to address course eligibility. There were no examples of attempts to credit work-based learning in the four states.

Table 4:
CALIFORNIA SYSTEMIC ACCOMMODATIONS

Lower school reform	University response
Cluster of systemic reforms aim at curricula and standards, grade span policy, performance-based student assessment, school restructuring effects on teacher preparation	California Education Roundtable joint Intersegmental Coordinating Council School Improvement Committee responsible for educating the higher education system about impacts
Professional development and in-service training for K-12 teachers	California Education Roundtable joint Subject Matter Concurrence Committee assigned to oversee higher education contributions to professional development
Cluster of restructuring initiatives, such as charter schools and teacher education and credentialing	California State University Center for Education Reform (1995) established as technical assistance agency

Innovations Promoted by Individual Universities and Profession Organizations

Individual universities and professional organizations also responded to school reforms that are actively pursued in high schools. The difference is that they designed activities to respond to needs inside the university. The examples found in Table 5, below, demonstrate innovators' desire for new pedagogies and ways to think about incoming students. The innovations emphasize themes strongly associated with STW: career exploration, student learning, and student transition. Respondents told similar stories about the innovations. Nearly all respondents said that working with high school teachers and community college faculty changed their understanding of these reforms and

their place in the university curriculum. They also said that a prevailing skepticism surfaced in their first months of start-up. This was slowly replaced by a determination to create models that would contain rigorous theoretic lessons and reflect more of the real world.

Table 5:

INNOVATIONS PROMOTED BY INDIVIDUAL UNIVERSITIES AND HIGHER EDUCATION PROFESSIONAL ORGANIZATIONS

Lower school reform	Innovation
Growth in transfers from tech-prep programs to Portland State University, Oregon	"Culture of the Professions Project" is a joint professional development project helping university faculty, community college faculty, and high school teachers to design curriculum on the nature and culture of professional life
Growth in local emphasis on careers in high schools and community colleges	Portland State University (1994) undergraduate program on the nature of work in contemporary professional culture (in development)
Emphasis on real world values in humanities curriculum	American Council of Learned Society humanities curriculum laboratories on university campuses for faculty and teacher-scholars
Graduating seniors may benefit from additional leadership during the senior year	California Education Roundtable/School Improvement Committee (1995) study of what constitutes the senior year and the implications for higher education

BARRIERS TO RESPONDING

The interviews about accommodations also revealed several common barriers to universities' ability to respond. The barriers represent difficulties that respondents overcame by sheer will, personal appeals, and facilitating improved communications and respect among lower school reformers, teachers, community college faculty, university faculty, and bureaucrats working on behalf state university systems.

Fragmented Curricular Decision Making

Curriculum formation is a department function and as such is fragmented relative to cross-curricular reforms. Because there are no interdisciplinary alternatives, it is simply difficult to sustain high-level discussions and negotiations across several subject-area departments. This requires great care when constituting committees whose members will rule on curriculum eligibility for integrated and interdisciplinary courses.

Lack of Known K-12 Champions

School reformers need to develop contacts with department faculty who will personally take the lead for getting an initiative on the department's agenda. Rarely do reformers seek out a faculty member to champion their reform.

Cultural Differences

Joint committees are difficult to manage because members have different expectations. University faculty expect to have curriculum issues negotiated over long periods of time, up to two years. However, high school teachers typically resolve curriculum issues in a matter of weeks or months. Also, faculty and teachers use different words and styles of language to convey meaning. These difficulties can be managed over time by a savvy facilitator.

Unspecified Reforms

Typically, reforms get their genesis in the "heads" of reformers and the specifics of the reform often only surface during demonstration. Reformers who do not take the time to specify their reforms are likely to experience some of the following difficulties: slow progress; incomplete demonstrations; lack of milestones or benchmarks on which to assess progress. It is in the public interest to have high-quality curriculum and learning reforms reach and receive a test with a full range of students and educators during a formative stage. The early involvement of university faculty might add to and improve the "test" curricula and lend legitimacy and attention by university administrators. When this happens the system is more likely to accommodate the reform. The specification of reforms will benefit from the involvement of a wider range of students, parents, employers, and educators.

5. CONCLUSIONS AND IMPLICATIONS

CONCLUSIONS

This section presents conclusions, lessons learned about how to improve university responsiveness to K-12 reform, and draws implications for policy makers.

School reform has become one of the most active policy arenas in the last decade. Much skepticism surrounds even the best efforts to improve public schooling. School reform has a poor record of producing long term improvements and changes in schooling. Past implementation failures of progressive education reforms in secondary schools suggest that university traditions of pedagogy, entitlement, and quality control standards worked against (i.e., did not respond to) sustained innovation in lower schools. The study reports on how state universities are responding to the demands of today's school reforms.

The case study results suggest that in the context of state environments, public university elites are able and willing to accommodate new school reforms. The mere rolling out of systemic reforms was not sufficient to capture the attention of university elites. Attention followed perceptions of real changes in the state environment. These changes include threats to the fiscal security of universities, questions over the value of the baccalaureate, and observations that new reforms produce cognitive gains. These changes warranted a new interest and concern with improvements and their implications for the university.

In revisiting the three hypotheses, the results reveal evidence that systemic accommodations have challenged traditional university admissions, transfer, and course eligibility practices. The design and implementation of these reforms depended on the involvement and leadership of university insiders. The first hypothesis suggested that insiders are important to internal acceptance and the results bear this out. The study indicates that accommodations need to be designed and implemented by someone who is an accepted member of the academy. The positive efforts in Oregon and Maryland have succeeded because the university-based reformers responsible for leading accommodations shared common language and values with lower school reformers.

University-based reformers designed accommodations in response to real changes in student skills. New student skills resulted from widespread implementation of constructivist and STW reforms in lower schools. Similarly, imminent adoption of new assessments and credentials at the high school level motivated development of new admissions assessments in two states. Implementation of these new admission assessments will reduce emphasis on course work and Carnegie crediting in admissions. The new emphasis will be on what candidates know and are able to do.

Acceptance of these accommodations required that university elites become educated about school reforms. Positive judgments that reforms are feasible—able to be implemented in a widespread fashion and can generate political support—created the opening for university based reformer to devise their own innovations. These innovation were seen by university elites as evidence that the university can partner with lower school reformers and add value to lower school reforms, particularly the demand for theoretic emphasis in new integrated and interdisciplinary courses.

Apparently moving from awareness to actual accommodation is not a straightforward process. Actual accommodations in teacher preparation have not been systemically adopted in any of the four states, but changes are hotly pursued by university insiders if only in discussions and small demonstrations. It may be that actual changes in credentials and certification tests—emphasizing new skills and knowledge for teachers—may be necessary to convince universities that widespread preservice teacher education changes are needed.

The finding is mixed on the second hypothesis that academic reforms will get the attention of university elites over vocational reforms. Appeals to approve single nonstandard academic course by university faculty were more successful than appeals for vocational courses. University faculty said that the emphasis on theory is the deciding factor favoring approval. Denied approvals for applied academic course were associated with judgments that courses contained few appreciable reading and writing requirements. On the other hand, widespread implementation of STW and tech-prep reforms generated new approval procedures and compositions of course eligibility approval committees in two states. The new committees emphasize proactive review of popular applied academics courses and technical assistance for those seeking approvals, rather than simply an approval decision. Even in these collaborative experiments, lower school

reformers learned that university faculty understand the meaningfulness and benefits of academic reforms fairly easily, but no so with vocational reforms.

Arrangements that separate lower school reformers from higher education are inimical to the demands of systemic implementation and widespread improvements. The results bear out that involvement with lower school reform grew out of perceived changes in state environments, as suggested by the third hypothesis. There was a universal ethic toward collaboration. Threats to the fiscal security of universities and competition for state general funds made university elites draw closer to SEAs. Many national professional organizations and education interest groups align on the theme of university and high school collaboration. Several actively motivate and provide technical assistance for new K-16 stakeholder bodies.

LESSONS LEARNED

If properly structured, university quality control standards can enhance the opportunity for innovative school reform. Accommodations such as PASS and intersegmental course eligibility committees reinforce the quality control tradition and at the same time permit lower school reformers to experiment with teaching and learning in a variety of settings. Imprecise quality control devices such as the Carnegie unit and seat time are not required when proficiency measures are implemented. This situation leaves a great deal of flexibility to students to select learning experiences.

Curriculum needs to be conceived as a system within which decisions are made about what the curriculum will be and how it will be implemented. Negotiation is inherent to the university's academic decision making process, and high school reformers can become part of that process. The place for this type of negotiation is intersegmental coordination councils. In fact, it can be a great way to focus and re-energize intersegmental activity. University and high school collaboration is one means for ensuring rigorous learning experience in light of budgetary shortfalls.

University elites require professional development focused on strategic responses to lower school reforms. Areas of concern include the motivation for attention getting and political change and the concept of steady-state systems. University-based reformers tend to operate within the confines of their state university systems, unaware of accommodations operating in other state systems. National education interest

groups are beginning to support innovators who share progress and refinements with others working similar experiments.[3]

POLICY IMPLICATIONS

Policy instruments can be constructed to enhance the climate for university responsiveness and mechanisms for accommodations to be carried out. An incentive-type policy instrument might involve legislation promoting collaboratives or teams of teachers and faculty as requirements for receiving demonstration funds. Capacity building efforts might include funding alternative assessment systems, evaluation of high school and community college demonstrations, demonstration for innovative preservice of teachers relative to requirements of school reform, or joint professional development for university leaders and reformers. Systems adaptation efforts might include projects to assess evidence of cognitive progress and feasibility studies on implementation within a state's apparatus of K-12 and higher education.

Reformers need to actively educate university leaders about school reforms. School-to-work offers a case in point. School-to-work reforms may be implemented in several forms, from providing students with serial work experience, concentrated internship, or participation in a school-based enterprise. The most common type is work experience—students are placed in a job. We know that all jobs are not equal relative to high school learning aims. How might a university admissions officer or faculty committee weighting course eligibility standard place a "value" on the work experience relative to baccalaureate learning aims? School reformers have to specify what work-based learning involves relative to school learning so that university faculty can make such judgments.

The stakeholder notion is behind new K-16 collaboratives, such as those taking shape in Maryland under the leadership of MHEC. Maryland's reconstituted intersegmental coordinating council serves the state's public education institutions and will focus on STW (K-12, community college, four-year schools, and the research university); joint faculty/teacher professional development institutes promoted by the

[3]A workshop for study participants was conducted as a companion effort to the study. Twenty-five participants and other invited education reformers and policy makers attended the one-and-one-half-day program. In the course of the program, participants discussed a gap in professional development opportunities to reflect on the results and issues surfaced by the study. There was strong consensus that the experience was valuable as a professional development activity.

American Council of Learned Society; and urban initiatives led by the Education Trust. STW educators must be actively involved in similar efforts to help advance the agenda.

The character of vocationalism is increasingly academic and the character of academia is increasingly vocational. This is another way of saying that they are both becoming more authentic relative to the real world. Something has to happen at the high school level to ensure that STW is a high-quality learning experience. And something can happen at the university to do the same. This means employing curricular frameworks that marry theory and practice.

The public university knows that Americans continue to aspire to higher education, but it is only now realizing that students will be increasingly educated in an interdisciplinary fashion, and will have a developed career focus and the ability to learn technical and academic skills. Active involvement with school reform can only help prepare higher education for serving the coming generation of learners.

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